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Personal emergency alarms: do health outcomes differ for purchasers and nonpurchasers?

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ABSTRACT

The objective of this study was to assess whether purchasing a personal alarm service makes a difference in a range of health outcomes for community dwelling older adults. The prospective cohort study involved 295 individuals for whom data on emergencies experienced at home were collected over a period of 12 months. Purchasers of alarms, compared to nonpurchasers, benefitted in terms of feeling more safe and secure and being more active around their home. Outcomes experienced after an emergency were similar for both groups with no differences found in terms of time spent on floor, or hospitalizations.

KEYWORDS

Falls; healthy aging; home emergency; personal alarms

Introduction

Over the past decade there has been increased government focus on policies that promote healthy aging and independent living. In Australia, this has resulted in a corresponding increase in the number of older adults living longer in the community and more often alone (Australian Institute of Health and Welfare, 2015). In 2011, approximately 25% of the population aged 65 years or over lived alone and the proportion living alone increased with age (Australian Bureau of Statistics, 2012). As a consequence, community-based aged care services now play a central role in assisting older people to remain living at home for as long as possible, and the need for early intervention strategies that can effectively prevent or reduce morbidity or the development of disability is paramount. Personal emergency alarms are designed to assist independent living and reduce morbidity by providing access to fast support in an emergency situation.

The main types of emergencies for which personal alarms are considered to be beneficial are medical—for example, heart problems or breathing difficulties, and falls when the person is unable to get up independently. It

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has been estimated that approximately 1 in 3 community dwelling people aged over 65, fall at least once every year (Dolinis, Harrison, & Andrews, 1997); and this proportion has been found to be higher again (44–46%) among Australian older adults receiving home care services (Burton & Lewin, 2016; Smith & Lewin, 2008). A study by Burton and Lewin (2016) reported that in a sample of 1,539 fallers, 30% were unable to get up and had called an ambulance for assistance. Fleming and Brayne (2008) found two thirds of people who fell were unable to get up and that 15% of all falls resulted in a "long lie," meaning the person was on the floor for an hour or more. Experiencing a long lie can increase the individual's risk of serious injury or death, hospital admission, reduced functional recovery, and/or premature admission to residential care (Fleming & Brayne, 2008; Gurley, Lum, Sande, Lo, & Katz, 1996). Evidence suggests that fear of falling can result in limitation of daily physical activities (Da Costa et al., 2012). This activity restriction can place an individual at greater risk of future functional decline (Martin, Hart, Spector, Doyle, & Harari, 2005), negatively impacting their ability to continue living independently.

Personal alarms have been available on the health services market for nearly 40 years in Australia (Bradbeer, Lindeman, & Smith, 2002). Given their long history and significant rate of usage in some countries, there has been relatively little research exploring their use. Of the existing studies, most have examined the effectiveness of personal alarms in terms of savings in the use of other more expensive services such as hospital and residential care. While some have demonstrated a reduction in hospital admissions and shorter hospital stays (Koch, 1984; McGadney-Douglass, 2001; Roush & Teasdale, 1997), others have not (Lee et al., 2007; Ruchlin & Morris, 1981; Sherwood & Morris, 1980).

More recent research has explored the characteristics of users (De San Miguel et al., 2015; Nyman & Victor, 2014) and older people's perspectives on using personal alarms and reasons for nonuse (De San Miguel & Lewin, 2008; Heinbuchner, Hautzinger, Becker, & Pfeiffer, 2010; Johnston, Grimmers-Sommers, & Sutherland, 2010; Levine & Tideiksaar, 1995; Mann, Belchior, Tomita, & Kemp, 2005). While some of these studies have reported perceived benefits, there are still gaps in knowledge in terms of what impact an alarm has on particular health outcomes. Particularly needed are, studies comparing the outcomes of an emergency for those who have an alarm, with those who do not have an alarm.

The objective of this study was therefore to assess whether purchasing an alarm service makes a difference to a range of outcomes including: receiving more rapid assistance in an emergency; number of hospitalizations; gaining confidence in being able to perform everyday activities; personal wellbeing; feeling safer and more secure; social isolation; and for users of alarms, whether having an alarm reduces family contact.

Methods

Study design

The study used a prospective cohort design in which purchasers and non-purchasers of personal alarms were followed over a 12-month period. To take part in the study, individuals needed to be able to speak English, be community dwelling, and be 65 years or older.

Recruitment

Individuals were recruited through a well-established health and home care provider in Western Australia. To be eligible for the purchasers group, individuals needed to have purchased a new alarm from the home care provider, during the recruitment phase. To be eligible for the non-purchasers group, individuals needed to have made an inquiry about purchasing an alarm through the home care provider's call center during the recruitment phase. After 6 weeks from their initial inquiry, if the individual had not signed up for the service they were then considered to be a non-purchaser.

When individuals phoned the home care provider's call center to purchase or inquire about the service, consent was sought to provide their contact information to the research team. When an individual subsequently purchased the service, or after 6 weeks if they had not (and become a non-purchaser), an information pack explaining the study was mailed to them. All individuals where then phoned to determine their interest in participating. For those that agreed, the researcher visited them at home to obtain written consent and complete the baseline data collection.

Data collection

Data collected during the initial interview included demographics, falls history, and baseline measures for a range of health outcomes. These included the Modified Falls Efficacy Scale (MFES) which measures how confident a person is to undertake daily activities without worrying about falling. Fourteen items are rated on a scale of 0 (*not confident*) to 10 (*completely confident*). It is a tool designed specifically for seniors and has demonstrated high retest reliability in an older sample of fallers and non-fallers (Hill, Schwarz, Kalogeropolous, & Gibson, 1996). The Lubben Social Network Scale (LSNS) is a six-item instrument designed to gauge social isolation in older adults by measuring perceived support received from family and friends. It is considered a valid and reliable short screening tool for social isolation in older persons (Lubben et al., 2006) and the Personal Wellbeing Index (PWI-A) which measures subjective wellbeing in adults. The scale contains seven quality of life domains such as health, standard of

living, relationships, achieving in life, safety, community connectedness, and future security (The International Wellbeing Group, 2013).

The research team phoned participants monthly for 12 months to capture the emergency data. Information was collected on the number and nature of emergencies, time spent on the floor, how assistance was gained, and whether the emergency resulted in an emergency department (ED) presentation or hospital admission. At the initial home visit, participants were provided with a calendar to record emergency details. This was a successful tool in aiding recall of events when the researcher phoned each month. Hospital morbidity data for the study period were also sought from the Western Australian Data Linkage Unit. This included all ED presentations and hospital admissions.

After participating in the study for 1 year, individuals were mailed a survey to collect follow-up data on the MFES, LSNS and PWI. For purchasers, the survey also collected information on how often they wore and used their alarm and what benefits they felt they had achieved by using an alarm.

Data analysis

Repeated measures *t*-tests were used to examine within-subject change in health outcomes over time. ANCOVA was used to examine differences between groups after adjusting for baseline scores and covariates of age, Instrumental Activities of Daily Living (IADL)/Activities of Daily Living (ADL) function scores, depression, and gender. Covariates were only included when they were significantly correlated with the dependent variable of interest. McNemar's test was used to examine the difference in proportions within-groups pre/post for dichotomous questions. A *p*-value of less than .05 was considered significant. Hospital admissions and length of stay were self-reported by participants but also confirmed by the morbidity data provided by the Western Australian Data Linkage Branch. In cases where the self-reported length of stay was unknown or differed from the morbidity data, the figures from the morbidity data set were used. All analyses were performed using STATA version 12 (StataCorp, 2011).

Alarm costs

The alarm service described is a user pays service, costing approximately $600 (equipment and installation fee) with a monthly monitoring fee of approximately $20.

Ethics

Approval was granted by the Human Research Ethics Committees of the University and the community care organization. Approval for the data

linkage was granted by the West Australian Department of Health Human Research Ethics Committee.

Results

Two hundred purchasers and 95 non-purchasers were recruited to take part. Results are presented only for individuals who completed all 12 months of the study—i.e., 157 purchasers and 65 non-purchasers. Reasons for loss to follow-up are outlined in Table 1. In addition there were also nine purchasers and 23 non-purchasers who were not considered in this analysis because they changed groups (either by purchasing an alarm or discontinuing their alarm service) during the course of the study.

Demographics

Purchasers and non-purchasers shared similar demographics with the majority of participants being female, living alone, receiving at least one formal home care service, and taking five or more prescription medications daily (Table 2). Purchasers (mean = 82.6 years, SD = 6.7) were significantly older than non-purchasers (mean = 79.3 years, SD = 6.3), $t(220) = -3.38$, $p \leq .001$. Previous falls did not differ significantly between groups.

Emergencies

Both groups experienced similar numbers of emergencies with 60 (38%) of purchasers and 26 (41%) of non-purchasers reporting one or more in the 12-month period. The number of emergencies for any individual ranged from 0–12 with falls being the most common type, accounting for 49% of all emergencies in both groups. Other emergencies reported by more than 5% in both groups included: suffering severe pain or feeling ill (15%), breathing difficulties (11%), and fainting (6%).

Gaining assistance

Purchasers used their alarm to summon help for approximately one third of all their emergencies (Table 3). A further 30% had someone else present

Table 1. Reasons for Study Withdrawal.

Reason	Purchasers	Non-purchasers	Total
Unable to contact	11	4	15
Moved to residential	6	1	7
No longer wanted to take part	2	0	2
Commenced palliative care	3	0	3
Moved interstate	1	0	1
Deceased	11	2	13
Total	34	7	41

Table 2. Demographics, Medical Conditions, and Falls History.

Demographics	Purchasers *n* (%/*SD*)	Nonpurchasers *n* (%/*SD*)	*p*-value
Age (years)	82.63 (*SD* 6.7)	79.35 (*SD* 6.3)	≤ .001
Gender (% female)	129 (82.2%)	47 (72.3%)	.099
Living arrangement (% lives alone)	119 (75.8%)	53 (81.5%)	.351
Receiving formal home care services	90 (57.3%)	40 (61.5%)	.562
Level of Education			
Primary	36 (22.9%)	10 (15.4%)	.053
Secondary	81 (51.6%)	28 (43.1%)	
Tertiary	40 (25.5%)	27 (41.5%)	
Medical Conditions			
Arthritis	105 (66.9%)	39 (60.0%)	.329
Heart condition	46 (29.3%)	15 (23.1%)	.345
Respiratory condition	46 (29.3%)	20 (30.8%)	.827
Diabetes	33 (21.0%)	15 (23.1%)	.735
Depression	21 (13.4%)	16 (24.6%)	.041
Osteoporosis	54 (34.4%)	20 (30.8%)	.602
Prescription Medications			
5 or more	85 (54.5%)	35 (53.8%)	.931
Fall History			
Fallen in past 12 months	97 (61.8%)	40 (61.5%)	.973
Past fall resulted in injury requiring medical attention	72 (74.2%)	26 (65.0%)	.277
Past fall resulted in lie over 30 minutes	31 (32.0%)	10 (25.0%)	.445

Table 3. How Assistance Was Gained in Each Emergency.

How assistance was gained	Purchasers	Nonpurchasers
Used alarm	27 (32.5%)	0 (0.0%)
Used phone to call family, ambulance, or doctor	22 (26.5%)	25 (35.2%)
Someone else present during emergency	25 (30.1%)	33 (46.5%)
Was able to get up by self after fall	3 (3.6%)	0 (0.0%)
Waited until able to crawl to furniture to pull themselves up	3 (3.6%)	10 (14.0%)
Waited for someone to come over	1 (1.2%)	0 (0.0%)
Called out until someone heard them	1 (1.2%)	1 (1.4%)
Unknown participant could not remember what happened	1 (1.2%)	1 (1.4%)
Passed out and found by friend	0 (0.0%)	1 (1.4%)
Total	83 (100%)	71 (100%)

during the emergency and 26% used their phone to contact help. For the nonpurchasers, 46% had someone else present during the emergency, 35% were able to use their phone, and 14% had to wait until they were able to crawl to furniture to pull themselves up (Table 3).

Analysis of the time spent on the floor or incapacitated waiting for assistance showed the majority of both groups waited 30 minutes or less for assistance (Table 4). Three purchasers and one nonpurchaser experienced a long lie of 60 minutes or more. The nonpurchaser had a fall and had to wait until they were able to get themselves up after several hours. The three purchasers were wearing their alarm at the time of the emergency but did not activate it. Reasons for nonactivation were:

(1) Individual fell in her bedroom, she was in and out of consciousness and forgot she was wearing her alarm. After 3 hours she eventually got

Table 4. Time Spent on Floor After Experiencing an Emergency.

Time on floor (minutes)	Purchasers	Nonpurchasers
0	48 (57.8%)	38 (53.5%)
1–14	11 (13.2%)	12 (16.9%)
15–30	17 (20.1%)	17 (23.9%)
31–59	4 (4.8%)	3 (4.2%)
60 +	3 (3.6%)	1 (1.4%)
Total	83 (100%)	71 (100%)

to the phone and called her daughter, who took her to the hospital where she was admitted for three nights.

(2) Individual fell in his home and was on the floor for 2 hours until he was able to get up. He was wearing his alarm at the time but wanted to wait until he was able to get himself up.

(3) Individual fell in the bathroom trying to hit a cockroach with her slipper. She didn't press the alarm because she didn't want an ambulance to be called, so she slowly crawled to the telephone to ring her neighbor. She was unaware that the alarm could be used to alert her neighbor in the first instance.

Emergency department presentations and hospitalizations

Just over half (n = 91, 59%) of all emergencies resulted in an ED presentation. There were no significant differences between the groups, with 63% of nonpurchasers and 57% of purchasers having an emergency that resulted in an ED presentation or subsequent admission to hospital. There were no differences in mean length of stay in hospital between purchasers (mean = 4.7, SD = 3.6) and nonpurchasers (mean = 4.6, SD = 6.3).

Wearing and using the alarm

Participants reported wearing their alarm "most times" or "always" inside their home (n = 128, 89%) and in outdoor garden areas (n = 109, 84%). In contrast, use when showering and in bed at night was low, with 32 and 22% reporting that they never wore their alarm in these situations, respectively. The main reasons provided for not wearing it in these situations were forgetting to wear it, being unsure about the alarm breaking if it became wet, and worrying about accidently setting it off while sleeping.

Health outcomes

Confidence to perform daily activities without falling

Within group analysis showed that mean scores for the MFES declined significantly between baseline and follow-up for both purchasers, t (149) = 5.55, $p \leq .001$, and nonpurchasers, t(50) = 3.03, p = .004 (Table 5). After adjustment for baseline MFES, depression, and function scores,

purchasers scored higher on the MFES at follow-up (7.80 ± 0.213) compared to nonpurchasers (7.62 ± 0.123), however the difference between groups was not statistically significant, $F(1, 192) = 0.50$, $p = .48$, partial $\eta^2 = .003$.

Fear of falling and activity restriction

In addition to the MFES, participants were asked two questions as to whether they were worried about falling and whether they restricted their daily activity because they were worried about falling. For both purchasers and nonpurchasers there was a statistically significant increase (12 and 13%, respectively) in the proportion who were worried about falling from baseline to follow-up, $\chi^2(1, N = 146) = 7.04$, $p = .008$, and $\chi^2(1, N = 52) = 8.9$, $p = .004$. However, when asked whether they had reduced their daily activity because they were worried about falling, the proportion of purchasers who restricted activity decreased from 34 to 32%, whereas nonpurchasers showed a significant 16% increase in the proportion who reported restricting their activity between baseline and the 12-month follow-up, $\chi^2(1, N = 51) = 7.4$, $p = .010$.

Personal wellbeing

Overall wellbeing declined significantly for both groups between baseline and follow-up (Table 5). After adjustment for baseline wellbeing scores, depression, and age, purchasers scored higher on overall wellbeing at follow-up (70.71 ± 1.40) than nonpurchasers (67.39 ± 2.41). This difference was not statistically significant, $F(1, 155) = 1.36$, $p = .25$, partial $\eta^2 = .009$.

Both groups reported feeling less satisfied with how safe they felt at the end of the study than they did at baseline. However, after adjustment for baseline safety score, depression, and age, the decrease in mean safety score over time reported by the nonpurchasers was significantly larger than the purchasers, $F(1, 19) = 6.56$, $p = .011$, partial $\eta^2 = .034$. This was also true for future security with the nonpurchasers again showing a significantly larger

Table 5. Change in Health Outcomes.

	Pre	Post	Pre–post change	*p*-value
Purchasers				
MFES	8.49 (1.6)	7.76 (2.0)	−0.73 (1.6)	≤ .001
PWI total	80.0 (12.8)	72.1 (15.9)	−7.9 (14.8)	≤ .001
PWI safety	8.2 (1.7)	7.8 (2.1)	−4 (2.1)	.026
PWI future security	8.3 (1.8)	7.7 (2.1)	−0.6 (2.2)	.002
LSNS	17.2 (5.7)	16.9 (5.9)	−0.4 (4.8)	.357
Nonpurchasers				
MFES	8.42 (1.4)	7.75 (1.7)	−0.67 (1.6)	.004
PWI total	73.5 (16.8)	63.4 (22.2)	−10.1 (18.5)	.001
PWI safety	8.0 (1.6)	6.6 (2.6)	−1.3 (2.5)	.007
PWI future security	7.7 (2.1)	6.1 (3.0)	−1.6 (2.9)	.001
LSNS	16.3 (6.2)	14.6 (5.9)	−1.8 (5.7)	.037

decrease in future security score over time in comparison to purchasers $F(1, 181) = 7.72$, $p = .006$, partial $\eta^2 = .041$.

Social isolation

There was no significant change for purchasers in LSNS score over time; however, the nonpurchasers' score significantly declined, $t(47) = 2.15$, $p = .037$ (Table 5). After adjustment for baseline LSNS score, depression, and gender, risk of social isolation was greater in the nonpurchasers (15.33 ± 0.66) than purchasers (16.60 ± 0.39). However, there was no statistically significant difference in the 12-month follow-up score between the groups, $F(1, 177) = 2.68$, $p = .103$, partial $\eta^2 = .015$.

Family contact

Participants were asked whether having an alarm had reduced their contact with family. The majority (70%) responded that it had no impact, 17% a small to medium impact, and 13% a large to very large impact. For those reporting a large to very large impact, this reduced contact was perceived as a positive outcome, with two thirds of participants reporting that they were happy about the reduced contact because it made them feel more independent without family constantly checking on them, while the remainder reported that the reduced contact did not bother them.

Reported benefits

The main benefits reported by purchasers were: feeling of security and peace of mind for themselves ($n = 135$, 90%); reduced anxiety about falling and not being able to get up ($n = 118$, 86%); feeling of security and peace of mind for their family ($n = 126$, 84%); providing fast assistance in an emergency situation ($n = 104$, 78%); extending the time they were able to continue living in their own home ($n = 107$, 71%); increasing confidence in performing everyday activities ($n = 89$, 70%); being able to get help from anywhere in the home ($n = 76$, 51%); and, being more active around the home because they were not worried about falling ($n = 68$, 45%).

Discussion

This study has shown that when comparing purchasers and nonpurchasers, those with an alarm service experienced more positive outcomes in terms of: feeling safer and more secure and being more active around their home. Purchasing an alarm did not, however, appear to have changed the outcomes as regards to time spent on floor, number and length of hospital admissions, confidence in doing activities without falling, social isolation, or overall personal wellbeing.

Gaining faster assistance in an emergency is ultimately what personal alarm systems are designed for. In this study more than a third of purchasers were indeed able to gain fast assistance by using their alarm. Fourteen percent of nonpurchasers experienced situations where they had to wait until they were able to crawl to furniture to pull themselves up, compared to only 4% of purchasers. This did not, however, translate into nonpurchasers experiencing longer lies on the floor. The self-reported length of lies was similar in both groups with only three purchasers and one nonpurchaser experiencing a lie of an hour or more. Johnston et al.'s (2010) retrospective study exploring South Australian Ambulance Service records of fallers also found no differences in long lies between users and nonusers of alarms, with 11 long lies in each group.

In this study, all three purchasers who experienced a long lie were wearing their alarm at the time of the emergency but did not activate it because they either forgot they were wearing it, wanted to see if they could get themselves up without bothering anyone, or were worried an ambulance would be called. These findings indicate that having a personal alarm does not always prevent a long lie and while there has been some research to identify the reasons for hesitation or nonuse of alarms in emergencies (De San Miguel & Lewin, 2008; Fleming & Brayne, 2008; Heinbuchner et al., 2010), no research was found that tested the effectiveness of different strategies to increase their appropriate use. This research is needed.

In 46% of the emergencies in the nonpurchaser group, someone else was present at the time the emergency occurred and it is difficult to predict what the outcomes may have been had someone else not been present. Despite the majority of individuals in both groups living alone, both groups had regular contact with others. Approximately 80% of both groups had two or fewer days a week where they did not see anyone. The frequency of contact with others of both groups would potentially explain why there was only a small proportion of long lies and why nonpurchasers had someone else present to assist. Interestingly, 26% of purchasers and 35% of nonpurchasers were able to use a phone to summon help, suggesting that mobile phone technology has provided older people with an alternative way of summoning help.

Current evidence on the use of personal alarms to reduce hospital admissions and length of stay presents a mixed picture and this is mainly due to differences in methodology and study populations. McGadney-Douglass (2001) showed ED visits increased for White elders and remained constant for African American elders using alarms; however, significant declines for hospital admissions and length of stay were found for both groups. Similarly, Roush and Teasdale (1997) also found no significant differences in ED visits, but did find a significant difference in hospital admissions and inpatient days for alarm users 1 year after enrolment in the alarm service. Both of these studies compared users of alarms

pre and post installation of the alarm; however, there was no comparison group of nonusers of alarms. The present study provided a comparison between users and nonusers of alarms and the lack of any difference between the two groups in terms of long lies or speed of getting help in an emergency would no doubt have contributed to the lack of any differences between the groups in terms of hospital admissions and length of stay.

This study did not provide any evidence that having an alarm reduces people's fear of falling as measured by the MFES. Lee et al. (2007) similarly reported no significant change in MFES scores for older patients with and without an alarm 30 days post discharge from an ED. It would appear in this study that while having an alarm did not necessarily make people less fearful of falling it did, however, have an impact on their behavior. Nonpurchasers had a significant increase in activity restriction during the 12-month study period, whereas purchasers did not. This is an important finding as activity restriction due to fear of falling can result in functional decline (Martin et al., 2005), ultimately impacting on the individual's ability to remain living independently.

It has been commonly reported that users of personal alarms experience increased security, peace of mind, and enhanced personal safety from having an alarm (De San Miguel & Lewin, 2008; Johnston, Grimmers-Sommers, & Sutherland, 2010). These previous studies, however, have not involved a comparison group or compared the results of a standardized measure at baseline and follow-up, only collecting reported benefits at a single point in time. In this study, when asked to retrospectively report on the benefits of having an alarm, the majority felt that it had made a large impact on their peace of mind, safety, and increasing the time they have been able to remain at home independently. While these findings were not reflected in improvements in PWI score, purchasers' safety and future security scores did not decline to the same degree as nonpurchasers' suggesting some benefit of the alarm.

Previous research has also identified that having an alarm can reduce family contact as the family do not feel they have to keep checking on their relative (De San Miguel & Lewin, 2008). Similarly, our study found that 13% of participants with alarms reported that it had had a large impact on reducing contact with family. While this could be seen as having the potentially negative consequence of socially isolating older adults, our study participants saw it as either a positive or neutral outcome.

Limitations

Random assignment was not possible for this study because it would be unethical to assign people to a nonalarm service group for 12 months if they perceived they were at risk of a home emergency and were prepared to purchase the service. Efforts were therefore made to recruit groups that

were as similar as possible in demographics and health status by recruiting individuals making inquiries about personal alarms from a single home care provider with the added criteria of being community dwelling and aged 65 or over. It was anticipated that nonpurchasers (who had made an initial inquiry) would be more similar to purchasers in terms of need, health status, and falls history than a sample from the general population. Despite these efforts there were some systematic differences between groups and these have been acknowledged and adjusted for as covariates in the ANCOVA analysis. The authors also acknowledge that since much more purchasers dropped out due to death than nonpurchasers, the results may have been biased toward the null hypothesis.

Although the analysis adjusted for differences between the groups at baseline, it was not possible to capture all changes in participants' health status or other life events occurring during the study that may have impacted the outcomes.

Time on the floor relied on faller recall which could be influenced by the severity of the fall, although there was no indication from the data that this resulted in a bias toward over or underestimation of the length of lie.

Conclusion

This study found that having a personal alarm service, when compared to not having such a service, benefited the users in terms of feeling more safe and secure and being more active around the home. No differences were found, however, in terms of time spent on floor, number and length of hospital admissions, confidence in doing activities without falling, overall personal wellbeing, or social isolation. While having a mobile phone enables an older person to get help faster in an emergency and potentially reduce the risk of an adverse outcome, a personal alarm appears to provide the added benefits of increasing both the older person's and their family's confidence in their safety thus enabling them to remain more active and independent.

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